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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,302	10/27/2003	Daizo Andoh	10873.742USD1	4187
52835 7	7590 01/24/2006		EXAMINER	
HAMRE, SC	HUMANN, MUELLE	TRINH, I	TRINH, MINH N	
P.O. BOX 2902-0902 MINNEAPOLIS, MN 55402			ART UNIT	PAPER NUMBER
			3729	

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Application No. Application			$\langle \dot{\gamma} \rangle$			
Examiner Art Unit 3729		Application No.	Applicant(s)			
Minh Trinh 3729	Office Action Comments	10/695,302	ANDOH ET AL.			
The MALING DATE of this communication appears on the cover sheet with the correspondence address − Period for Reply A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION. Extentions of time may be available used the growthout of 37 CFR 1:1361, in ne event, however, may a may be timely filled. If NO period for reply is specified above, the maximum elitulatory princed will apply and will expire SIX (5) MONTHS from the maling date of this communication. Failute for reply willshife set or excluded period for reply will, by stakine, cause the application become ABANDONEGO (51 U.S. C. § 1313). Any reply received by the Cities lister than three mainlines after the maling date of this communication, even if timely filled, may reduce any events galactive than adjustment. Status 1) □ Responsive to communication(s) filled on 25 October 2005. 2a) □ This action is FINAL. 2b) □ This action is non-final. 3) □ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4) □ Claim(s)	Oπice Action Summary	Examiner	Art Unit			
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WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION. Ederations of time may be available under the proteids of 3°C FR 1.13°C, in no event, however, may any by be timely filled after 50 (6) MOUNTS from the mailing date of this communication. Fallows for event of the protein of		ears on the cover sheet with the c	orrespondence address			
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DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 16-24 and 27 in the reply filed on 10/24/05 is acknowledged. Thus, claims 25-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Invention II, there being no allowable generic or linking claim. Election was made without traverse dated 10/24/05. An action on the merits of elected claims 16-24 as follows.

Specification

- 2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the method claims are directed.
- 3. The abstract should be revised to readable on the method instead of product invention.

Claim Rejections - 35 USC § 112

- 4. The following is a quotation of the second paragraph of 35 U.S.C. 112:
 The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
- 5. Claims 17-19, 23 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
 - a) "the resin layer" (claim 17, line 2) lacks proper antecedent basis.

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b) What is being refer as " in a prepeg stage comprises a void. . . " (claim 18, line 2) please describe in details.

- c) "the void" (claim 19, line 2) lacks proper antecedent basis.
- d) claim 23 appears to be similar to claim 16 should have been cancelled because it is not further limit the linking or base claim 16.
- e) It is unclear whether the recites: "at least one inorganic filler "(claim 27, line 2) is as same as "a conductive filler" of its base claim 16, line 6?

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- 7. Claims 16-24 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakatani (5,888,627).

Nakatani discloses method for manufacturing PCB including steps: preparing a dielectric substrate 100 of a pre-preg formed by impregnating a glass cloth or a glass non-woven fabric with a thermosetting epoxy resin mixed with fine particles (see the discussion at col. 2, lines 25-28, and col. 8, lines 35-36, 47-67),

coating both surface of the substrate with mold releasing film 102 and subsequently forming a via hole 103 (see process shown in Fig. 1A-1D),

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filling the via hole 103 with a conductive 104 containing a conductive filler having an average particle diameter larger than an average diameter of the fine particles,

peeling the mold releasing films 102 and layering metal foils 105 on the surfaces of the dielectric substrate,

compressing the dielectric substrate 100 having the metal foils 105 by applying heat and pressure to adhere the dielectric substrate and the metal foils and to connect electrically the metal foils with each other (see the discussion at col. 9, lines 38-55), and forming the foils to have a predetermined pattern 106 (as shown in end process stage of Fig. 1G).

As applied to claims 17-21, Nakatani discloses where the substrate 100 having thickness of 50µm (see col. 7, lines 39-40, and col. 9, line 4). The dielectric substrate having at least a void in a pre-preg stage and thinning by pressing as recited in claims 18-20 (see col.9, lines 59-60).

As applied to claim 22, Nakatani discloses process of claim 22 it is inherent that by applying heat and pressure would reduce the thickness of the via hole and the substrate (see the discussion at col. 7, lines 45-48, etc.,).

As applied to claim 23, limitation of claim 23 is met by Nakatani (see discussion in section 7, paragraph 1 above).

As applied to claim 24, limitation of this claim is met by Nakatani (see Figs. 1- 4, which shows a plurality of double sides PCB are formed in combination w/ the discussion in section 7, paragraph 1 above).

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As applied to claim 27, noting the Nakatani reference discloses the organic filler having the configurations similar to the one as claimed in claim 27 (see the discussion at col. 3, lines 35-50, etc.,).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Trinh whose telephone number is (571) 272-4569. The examiner can normally be reached on Monday -Thursday 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (571) 272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mt 1/19/06

MINHTRINH
PRIMARY EXAMINER

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